

SCANNER USER'S GUIDE

The Scan Dialog Box

The TWAIN Dialog Box

Appendices

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FCC Statement

This digital equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and if it is not installed and used according to the instruction manual, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception, which can be determined by turning the equipment off or on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Increase the distance between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

NOTE:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.

Table of Contents

Scanning Methods	4
The Scan Dialog Box	5
To Acquire the Scan Dialog Box	6
Function Buttons	7
Menu Pages	7
Scan Page	7
Copy Page	7
Fax Page	8
OCR Page	8
E-Mail Page	8
The TWAIN Dialog Box	9
To Acquire the TWAIN Dialog Box	10
Performing a Simple Scan	11
(1) Position the Document	11
(2) Preview the Image	11
(3) Select the Scan Size	12
(4) Use the Crop Frame	12
(5) Set the Scan Mode	12
(6) Set the Resolution	12
(7) Execute the Scan	12

The TWAIN Dialog Box (Details)	13`
The Preview Window and Buttons	14
The Image Setting Buttons	16
Scan Settings	17
The Main Tab	17
The Enhance Tab	20
The Filters Tab	23
About Tab	24
Using Batch Scan	25
Batch Scan Controls	25
Batch Scan Status	26
To Perform a Batch Scan	26

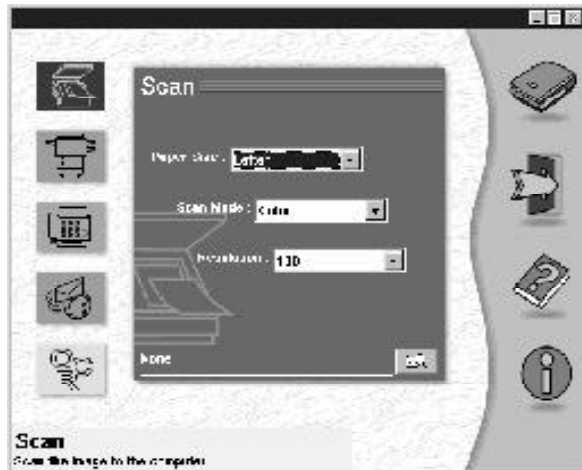
Appendices

A: Scanning Tips	27
B: Troubleshooting	28

Scanning Methods

There are two separate methods to scan an image. The Scan dialog box which is ideal for quick and simple scans and the TWAIN dialog box which offers more control over the output. The following pages contain more details about these different scanning methods.

Scan Dialog Box



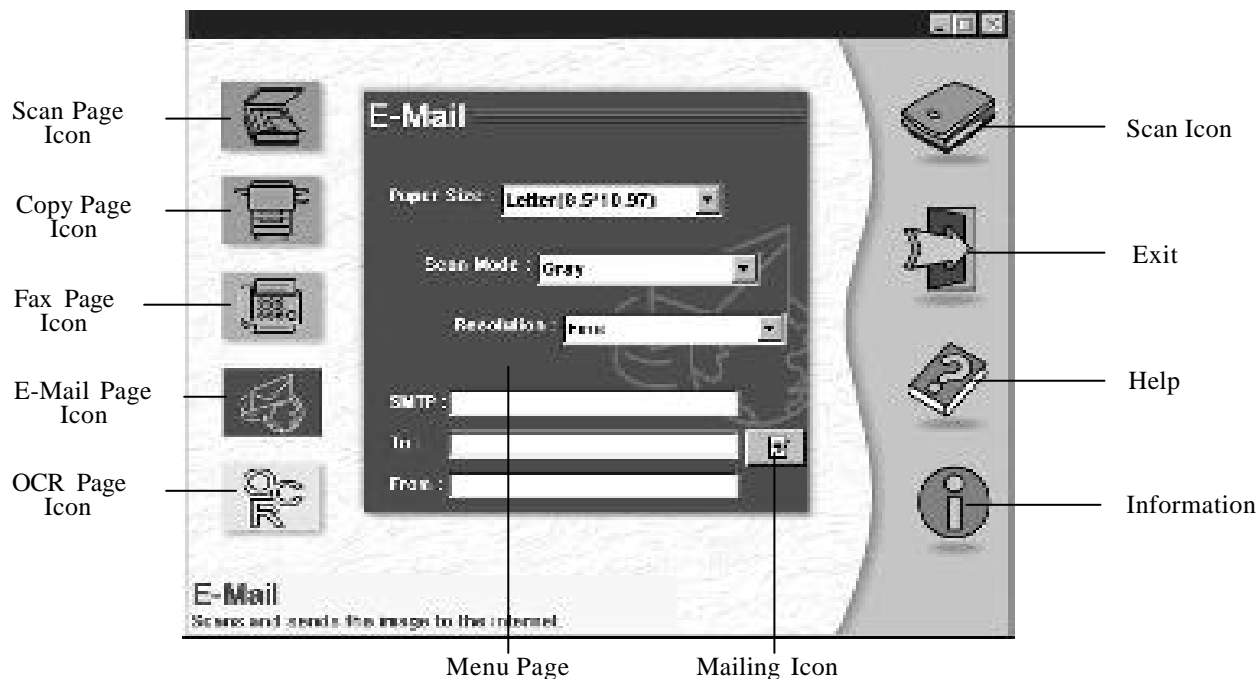
TWAIN Dialog Box



The Scan Dialog Box

The Scan dialog box allows you to perform several functions using your scanner (e.g. scan, copy, and fax). Simply select the function that you wish to use by clicking

on the appropriate page icon and the corresponding menu page will appear. Be sure to make the proper adjustments in regards to Paper Size, Scan Mode, and/or Resolution before clicking on the Scan icon.



To Acquire the Scan Dialog Box

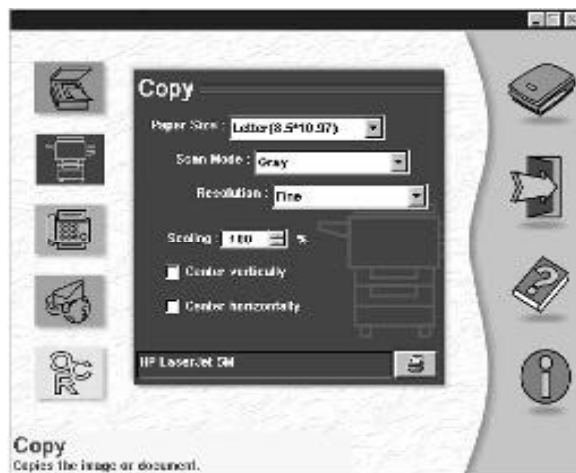
The Scan Dialog Box Item:

Simply click on **“Start”** on your Windows desktop and locate the name of your scanner model under **“Programs”**. Then double-click the item **“Scan Dialog Box”**.

OR

The Direct Scan Icon:

Double-click the Direct Scan icon located in your Windows taskbar and the Scan dialog box opens.



Function Buttons



Scan Icon:

Initializes the function of the Menu page currently selected (e.g. Copy Page=Copy, Fax Page=Fax).



Exit:

Exits the Scan dialog box.



Help:

Enters the scanner's on-line help system.



Information:

Shows product information.

Menu Pages



Scan Page:

Scan an image or document to the computer via any image editing software.



Use the **Browse** icon to select the image-editing software from your computer. Photo Express is automatically installed as your default software.



Click the **Scan** icon to begin scanning!

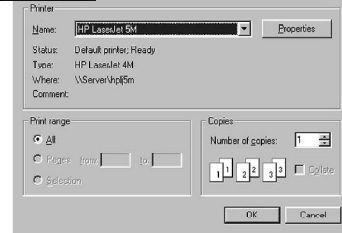


Copy Page:

Copy an image or document to your printer.



Prior to scanning, use the **Print** icon to select the appropriate printer from within your computer.



Click the **Scan** icon to begin copying!

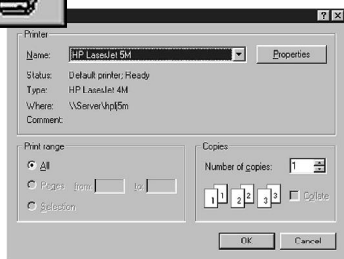


Fax Page:

Scan and fax an image or document via your fax modem.



Prior to scanning, use the **Print** icon to select the appropriate printer (Fax driver) from your computer.



Click the **Scan** icon to begin faxing!



OCR Page:

Convert an image document to a text file using TextBridge.

Click the **Scan** icon to execute the OCR function!

TextBridge will automatically open showing an image thumbnail of the scanned document. Save the document as desired, then open the document using your word processing software.



E-Mail Page:

Scan and send an image or document to the Internet using your SMTP address/account.



Enter your SMTP address, the destination address (To:), and your full address (From:).

(For SMTP details, contact your Internet Service Provider)



Clicking the **Mailing** icon opens the Mailbox, which allows you to type an attachment.



Clicking the **To:** button opens the Address book, which allows you to store addresses and add additional destination

addresses to your e-mail.

Click the **Scan** icon to begin sending your information across the Internet!

The TWAIN Dialog Box

The TWAIN dialog box is another scanning option provided with your scanner. TWAIN is an industry standard that allows scanning directly into any TWAIN-compliant software. It eliminates most compatibility

problems associated with software and input devices supplied by different vendors.

You can access the TWAIN dialog box from within most image editing software such as the application software bundled with the scanner (e.g. Photo Express).



To Acquire the TWAIN DialogBox

You can acquire the TWAIN dialog box from within any TWAIN-compliant software (i.e. Photo Express). To acquire the TWAIN dialog box, using Photo Express as an example, the steps are:

1. Launch Windows.
2. Launch Photo Express (TWAIN-compliant program).
3. Under the File menu, open the **Acquire** command and choose **Scanner** OR Click the Scanner icon. The Select Data Source dialog box appears.
4. Choose your scanner in the Select Data Source dialog box. If there is only one source available, it is automatically selected.
5. Click the **Acquire** button.
The Select Data Source dialog box closes.
The TWAIN dialog box appears.

Performing a Simple Scan

The steps for a simple scan are:

- (1) Position the image or document to be scanned.
- (2) Click Preview to see the image in the Preview Window.
- (3) Select the scan size.
- (4) Using the crop frame, outline the area to be scanned.
- (5) Select the desired scan mode.
- (6) Select the desired resolution.
- (7) Click the Scan button.

(1) Position the Document/Image

For the best possible image scans, it is important that you position your documents correctly. Please follow these steps:

- a. Lift the document cover.
- b. Place the document face down on the glass and in the upper right corner where the alignment arrow is located.



- c. Slowly lower the document cover, making sure the document remains in position.

Note: Remove the document after scanning is complete.

(2) Preview the Image



A Preview is a quick low-resolution scan of the entire original image. From this low-resolution scan you get a clearer idea of the image area you want to include in your final scan.

(3) Select the Scan Size

From the list of available paper sizes, select the size of the document you wish to scan. Custom will automatically be selected when you use the Crop Frame to change the image area to be scanned.

(4) Use the Crop Frame



Use the Crop Frame in the Preview Window to outline the image area you wish to scan. Click one of the sides or corners of the Crop Frame and drag it to the desired length and width. To move the entire Crop Frame, position the mouse cursor inside it and drag with the (left) mouse button. Only the area inside the Crop Frame will be included in the resulting scanned image when you click on the Scan button.

(5) Set the Scan Mode



The Scan Mode determines how the scanner will view the image. Select **Color** to capture images in color. Select **Gray** to capture images in shades of gray. When you wish to scan line art or text for OCR (Optical Character Recognition), select **Lineart**.

(6) Set the Resolution

The Resolution, which is measured in dots per inch (dpi), determines the effect of the image as it is displayed or printed. Images scanned at a high resolution capture more information. However, high-resolution images require more memory.

See Scan Tips, Appendix A, (Pg. 27)

(7) Execute the Scan



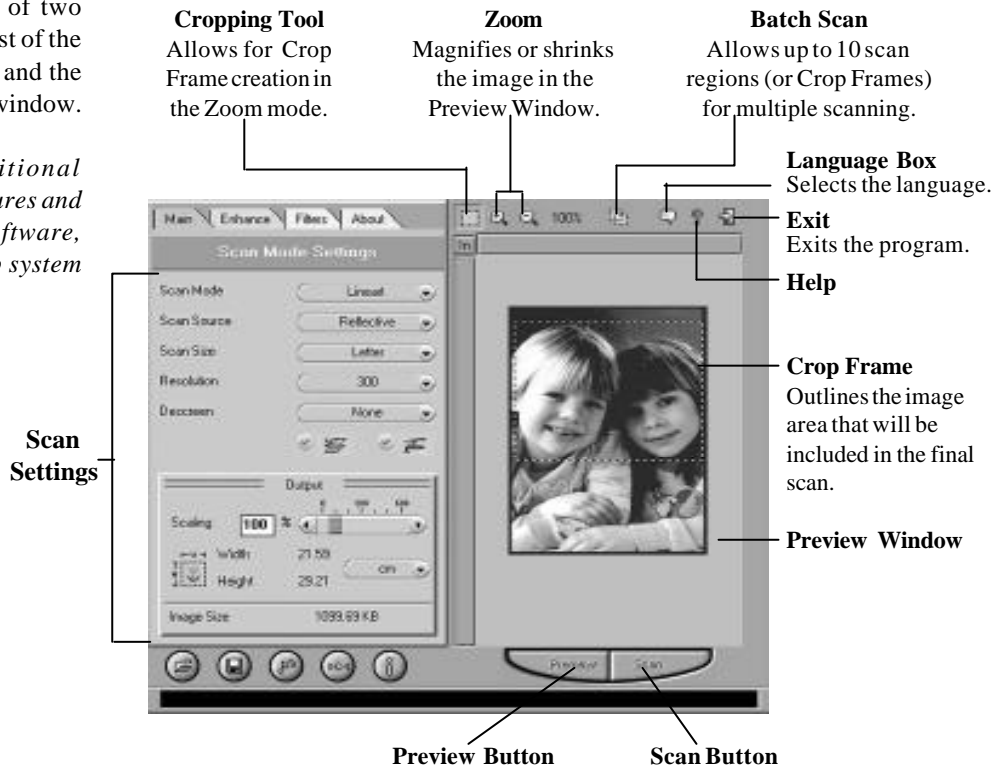
The scan button is used once you have completed the preview, determined the scan region and have selected the final scan settings to be used for the scan.

The TWAIN Dialog Box (Details)

The TWAIN dialog box consists of two sections- the left section where most of the TWAIN control settings are found and the right section, which is the Preview window.

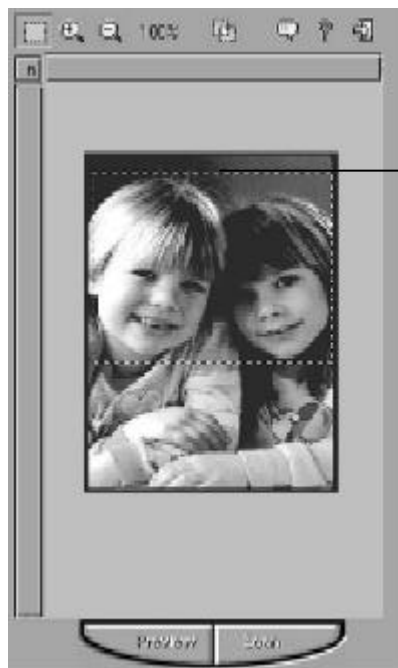


*For more detailed or additional information regarding the features and functions of your scanner software, please refer to the on-line help system by clicking on the **Help** icon.*



The Preview Window & Buttons

The Preview window is where the preview image appears. It is recommended that you preview each document/image before scanning. Using the preview image, you can specify the final image area to be included in the scan and/or apply the enhance and filters features (pg.20-24).



Crop Frame

Outlines the scan area or region that will be included in the final scan.



• Preview

Preview (a quick low-resolution scan of the entire original image) the image in order to get a clearer idea of the image area you want to include in your final scan. To preview, the steps are:

1. Place the document face down on the scan window glass.
2. Click on the **Preview** button. After the scanner has scanned the document, the scanned image will appear in the Preview Window.



• Cropping Tool

Clicking this button creates a Crop Frame (dotted rectangle) in the Preview window while in Zoom mode. The Crop Frame outlines the image area you wish to scan. Click one of the sides or corners of the Crop Frame and drag it to the desired length and width. To move the entire Crop Frame, position the mouse cursor inside it and drag with the left mouse button. Use the cropping tool with the zoom tools to set the exact image area you wish to include in your final scan.



• Zoom Tools

The Zoom In tool increases the magnification (multiple levels) of the image area. In magnified view, you can drag the Crop Frame to the exact area you want to scan. Use the Zoom Out tool to shrink the image.



• Batch Scan Button

Clicking this button allows you to create multiple scan areas using different scan settings on the image shown in the Preview Window. For more details, please refer to *Using Batch Scan* on page 25.



• Scan

After determining the exact image area you wish to scan and selecting your desired scan settings, click the **Scan** button to perform the scan. When scanning is complete, the image will be displayed on the main screen of the host software behind the TWAIN dialog box.



• Help

Provides on-line help for the scanner and software functions.



• Language Icon

Selects the language you would like to view the TWAIN interface in.



• Exit Icon

Exits the program.

The Image Setting Buttons

The Image Setting buttons allow you to create your own convenient scan settings. Saving image settings allows you to use the same settings again and again without resetting the image options.



- **Load Button**

Loads previously saved settings.



- **Save Button**

Saves current image settings to a specified location.



- **Previous Button**

Reloads the last saved image settings.



- **Reset Button**

Returns the image settings to their default values.



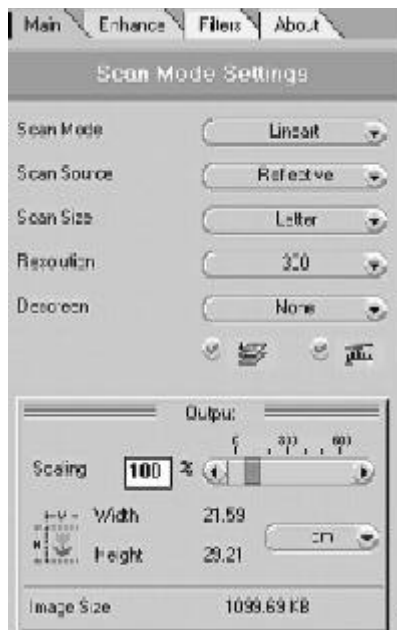
- **Information Button**

Displays all the current control settings of the TWAIN dialog box.

Scan Settings

The Main Tab

The Main tab allows you to control the scanning parameters, such as scan mode, scan source, resolution, etc. These parameters determine how the original image or document will be scanned.



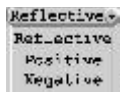
Scan Mode



The Scan Mode determines how the scanner reads the original image or document. When choosing a scan mode, it is recommended to consider what purpose the resulting scanned image will be used for.

- LineArt**
 Use this mode to scan text documents for use in OCR (Optical Character Recognition) or when you wish to scan black-and-white drawings.
- Gray**
 Select **Gray** to capture images in shades of gray.
- Color**
 Select **Color** to capture images in color.

Scan Source



The Scan Source setting is used to select the type of document you will be scanning.

- **Reflective**

Use Reflective when scanning paper-based documents such as photographs or text.

With the optional Transparency Adapter, you can also scan Positive and Negative transparencies.

- **Positive**

Select Positive when scanning slides or transparencies.

- **Negative**

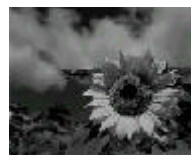
Select Negative when scanning film negatives or similar negative transparencies.

Scan Size

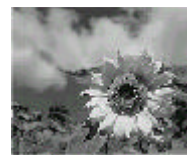
From the list of available sizes, select the size of the document you wish to scan. Custom will automatically be selected when you use the Crop Frame to change the image area to be scanned.

Resolution

The Resolution, which is measured in dots per inch (dpi), determines the appearance of the image as it is displayed or printed. Images scanned at a higher resolution capture more information and therefore require more disk space for storage. You can select from a wide range of preset resolutions.



75 dpi



400 dpi

Descreen



A tool for reducing moiré patterns in scanned images of originals that were created by a halftone process. Moiré patterns appear as unsightly interference patterns.

- **None**

Choose **None** if you want to scan images of photographic quality.

- **Newspaper**

Choose **Newspaper** when the image is made up of coarse dot patterns commonly found in newspaper photos.

- **Magazine**

Choose **Magazine** when scanning images whose quality is similar to images found in glossy or wax-coated magazines.

- **Art Print**

Choose **Art Print** when scanning images from very high quality art prints that show only very fine dots.

Color Match



This is an effective tool for ensuring that the colors captured by the scanner more accurately reflect the actual colors of the original image. Without color matching the scanner captures a wider range of colors but these colors may not accurately match the true colors of the original image, making the scan appear different from the original.

Color Balance



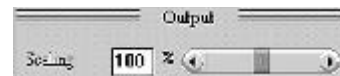
This tool balances the lightest and darkest areas of an image so that they are equally distributed.



Without Color Balance



With Color Balance



Output Scaling

Output scaling allows you to enlarge/shrink the size of the final output image. Adjust the scaling by using the slide bar or typing the desired setting in the Output Scaling box. For example, setting the Output Scaling to 200% will double the amount of pixels contained in the image.

Width and Height

The Width and Height values show the dimensions of the image area inside the Crop Frame. You can change the measurement unit to centimeters or inches.

Image Size

Image Size displays the amount of disk space needed to display or save the image outlined by the Crop Frame in the Preview window. The Image Size information is automatically updated anytime you change any of the scan settings or resize the Crop Frame.

The Enhance Tab

The Enhance tab contains preprocessing controls that can be applied to the image before making the final scan. To access the Enhance tab, click Enhance.

The Enhance tab contains two picture thumbnails (Original and Sample) of the preview image, several control settings, and a histogram of the image. Alterations made to the enhance settings appear in the sample thumbnail.



Thumbnails

The image that appears in the thumbnails will automatically be replaced with the Preview image. If you wish to see the effects of your changes in the Preview Window, click on the Preview button.

Channel Selector



Channel refers to the red, green, and blue colors that make up a color image. You can choose to change the channels individually or choose Master to change all channels equally and simultaneously. An image in Gray Mode has one channel.

Histogram

The Histogram graph shows the distribution of brightness levels in an image. Using the control settings (Brightness, Contrast, Gamma) you can selectively adjust the brightness levels in the shadows, midtones and the highlights of the image.



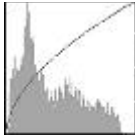
A diagonal line extending from the lower left corner to the upper right corner indicates there is a balance between brightness and shadows.

Using the Channel Selector allows the histogram to reflect the distribution of brightness in an entire image or in individual colors (Red, Green, and Blue).

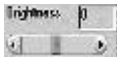
Histogram Button



The Histogram Button allows you to view the histogram as either a line graph or a bar graph. As a bar graph, the horizontal axis represents the brightness levels from darkest (left) to brightest (right). The vertical axis represents the amount of pixels with that brightness level value. To adjust the display of the histogram, click on the Histogram button and then click on the + or - button.



Brightness Control



Using 255 steps, this tool allows you to adjust the overall amount of light in the image. A value of -127 will make the image appear very dark, whereas, a value of +127 will make the image appear very bright.



Brightness -50



Brightness 0



Brightness 50

Contrast Control



Using 255 steps, this tool controls the disparity in tone between the dark and light areas of an image. Positive values create greater differences between dark and light areas of the image, whereas, negative values create greater similarities between the dark and light areas of the image.



Contrast -50



Contrast 0



Contrast 50

Gamma Control



The Gamma control is used for adjusting the brightness level in the highlights, mid-tones, and shadows of the image. Values of 0.1 to 2.0 primarily affect the shadow areas of the image. Values of 2.1 to 6.0 primarily affect the midtone areas, and values of 6.1 to 7.9 primarily affect the highlight areas.

For Example: A gamma value of 1.9 will make the shadows of an image appear brighter, whereas, a value of 0.2 would darken these shadow areas (taking away brightness). The histogram graph will display these gamma value effects in the bottom right portion of the histogram graph

(signifying shadows). A gamma value of 7.8 will add light to the highlight areas of the image (making the image appear bright), whereas, a value of 6.4 would subtract light from these highlight areas. The histogram will display these gamma value effects in the top left portion of the histogram graph (signifying highlights).



Gamma 0.6



Gamma 1.5

Preview Button

Click the Preview button to see any changes made to the image. The changes will appear in the Preview window.

The Filters Tab

The Filters tab contains special effect controls that allow you to alter the image before making your final scan. To access the Filters tab, click Filters.



The Filters tab also contains two thumbnails of the previewed image. Any filter you choose will immediately show its effect in the sample thumbnail.

None

No filter is applied if None (default setting) is selected.



Blur

The Blur filter smooths the image by lightening the pixels that are in sharp contrast to their neighboring pixels. The amount of blur applied is controlled with the plus and minus buttons.



Sharpen

The Sharpen filter enhances the detail in blurry images by improving the focus and increasing the contrast in the image. The amount of sharpness applied is controlled with the plus and minus buttons.



Invert

The Invert filter transforms an image to its negative by converting all color values to their opposites: whites become black, blues become yellow, etc.

**Flip**

The Flip filter creates a mirror image of the original by flipping the image horizontally.

**Unsharp Mask**

The Unsharp Mask filter detects sharp edges and color boundaries and then emphasizes them.

**Emboss**

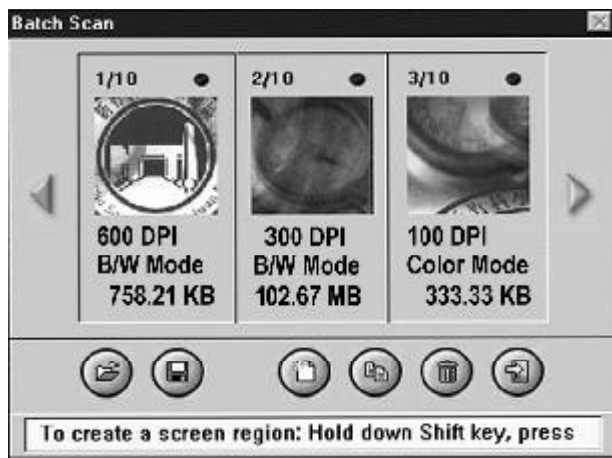
The Emboss filter makes the elements in an image appear raised or sunken by reducing the color within the image and tracing its edges with black.

**About Tab**







The About tab contains the current driver version number, information about the interface device, and the copyright notice. To access the About tab, click About.

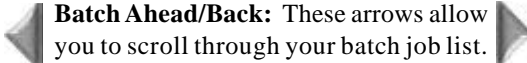
Using Batch Scan

Batch scanning is an easy way to multi-scan any part of your document using a variety of scan settings (Certain application programs do not support this function). Using Batch Scan you can specify up to 10 scan regions or scan a single region several times using different scan modes, resolutions, filters, and more.



Batch Scan Controls

-  **Load Batch Scan:** loads previously saved batch scan settings.
-  **Save Batch Scan:** saves the current batch scan settings.
-  **Create Batch Scan:** allows the user to create a new batch scan.
-  **Duplicate Batch Scan:** duplicates the selected batch scan settings.
-  **Delete Batch Scan:** deletes a batch scan.
-  **Exit Batch Scan:** exits the batch scan box.

 **Batch Ahead/Back:** These arrows allow you to scroll through your batch job list.



The Batch Box contains the thumbnail image, DPI, scan mode and image size of each batch scan. The batch number (e.g. 1/10, number 1 out of ten) is always displayed at the top of the batch box along with the Batch Scan Status.

Batch Scan Status

- **Batch Scan Completed:** The **medium green** light at the top of the image means that the scanner has completed the batch job.
- **Batch Scan in Progress:** The **bright green** light at the top of the image means that the scanner is currently scanning the batch job.
- **Batch Scan Waiting:** The **dark green** light at the top of the image means that this particular batch job is waiting to be scanned.

To Perform a Batch Scan

1. Click on the Batch Scan button. The Batch Scan dialog box appears.
 2. Create a scan region:
 - (a) Move the cursor inside the preview window.
 - (b) Hold down the Shift key, press the left mouse button and drag the mouse to create a crop frame.
 - (c) Reposition or resize the crop frame if necessary.
 3. In the TWAIN dialog box, set the desired scan mode and resolution for the current scan region.
 4. Repeat steps 2 and 3 if you wish to create additional scan regions.
- Note:** Using the Batch Scan arrows allows you to view the different batch jobs.*
5. Click **Scan**. The scanner will begin to scan the batch jobs one after the other.

Appendices

Appendix A: Scanning Tips

The following tables provide helpful information you can use when setting the scan mode and/or resolution. Recommended scanning resolutions for various output devices are listed as follows:

PRINTER TYPE	INPUT MATERIAL	SUGGESTED SCAN MODE	RESOLUTION
600-dpi Laser Printer	Color	Grayscale	150 dpi
	Grayscale	Grayscale	150 dpi
	Line Art/Text	Line Art/Text	600 dpi
Color Inkjet Printer	Color Grayscale Line Art/Text	Color Grayscale Line Art/Text	1/3 ~ 1/2 of print-out resolution
Dye Sublimation or Color Laser Printer	Color Grayscale Line Art/Text	Color Grayscale Line Art/Text	Equal to your preferred print-out resolution

Space requirements for different scan modes:

4" x 6" Image Scan	100 dpi	150 dpi	300 dpi	600 dpi
Gray	234 Kb	517 Kb	1.06 Mb	8.24 Mb
Color	703 Kb	1.54 Mb	6.18 Mb	24.7 Mb

A4 Size Document Scan	200 dpi	300 dpi	400 dpi
Line Art/Text	472 Kb	1.04 Mb	1.84 Mb

Appendix B: Troubleshooting

Notes:

- *It is not possible to print and scan at the same time.*
- *Do not disassemble the device to fix problems!*
- *When not using the scanner for long periods of time, you should unplug the power adapter from the wall socket.*

1. The computer fails to recognize the scanner.

Check to ensure the scanner is correctly connected to the computer. *Power off your computer and the scanner, and reconnect them by carefully following our hardware installation instructions.*

2. The scan command is not executed.

The scanner cable may be connected loosely. *Check to ensure the scanner is correctly connected to the computer.*

3. Why do my images look blotchy or blurry?

If your scans are looking bad on screen, but printing out satisfactorily, it could be your video driver that is causing the problem. Try changing the resolution and color settings in the “Display” portion of your Windows control panel (after first making sure that you have the proper driver disks to restore your system to the original settings). You should be using

a driver that provides 16+million colors, and a resolution of at least 800 x 600.

4. What resolution should I scan at?

- a. You should scan at the resolution of your output device.
- b. If you plan to display your scans on a computer monitor (Intrenet), which has a resolution of 72DPI, we recommend scanning at 72 DPI.
- c. If your output device is an inkjet printer:
 - For color images,
scan at 1/3 the allowable resolution of the printer.
 - For Gray Mode or Lineart images,
scan at the full resolution of the printer.

5. The scanned picture is not clear.

We recommend that you keep the scan window glass and the document cover clean. They should be cleaned on a regular basis. The cleaning steps are:

- a. Turn off the scanner and unplug the power cord.
- b. Open the document cover and use a cloth dampened with alcohol to clean the scan window glass and the cover separately.
- c. Use a lint-free dry cloth to dry the glass and cover.

Note: Please refer to one of our web sites for more troubleshooting tips (***F**requently **A**sks **Q**uestions*).